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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,478	11/28/2003	Thomas M. Moy	20435-00144-US01	8017
30678	7590	08/23/2005	EXAMINER	
CONNOLLY BOVE LODGE & HUTZ LLP SUITE 800 1990 M STREET NW WASHINGTON, DC 20036-3425				MCCLENDON, SANZA L
		ART UNIT		PAPER NUMBER
		1711		

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/722,478	MOY ET AL.
	<b>Examiner</b> Sanza L. McClendon	<b>Art Unit</b> 1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### **Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1)  Responsive to communication(s) filed on 09 June 2005.  
2a)  This action is **FINAL**.                  2b)  This action is non-final.  
3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

- 4)  Claim(s) 1-19 is/are pending in the application.  
    4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-19 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## **Application Papers**

- 9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on 28 November 2003 is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All b) Some \* c) None of:  
1. Certified copies of the priority documents have been received.  
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date . . .  
4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.  
5)  Notice of Informal Patent Application (PTO-152)  
6)  Other: \_\_\_\_\_.

**DETAILED ACTION**

***Response to Amendment***

1. In response to the Amendment received on June 9, 2005, the examiner has carefully considered the amendments. The claim objections for claim 5 has been overcome by the amendment and has hereby been withdrawn for consideration.

***Response to Arguments***

2. Applicant's arguments filed June 9, 2005 have been fully considered but they are not persuasive. It appears applicant is relying on the amendment "substantially the absence of exogenous photoinitiators" to overcome the prior art rejections. Furthermore, applicant directs examiner to column 6, lines 45-48 of Nerad et al, stating that the thiol-ene systems taught in said reference require photoinitiators. This is noted, however, also in column 6, lines 49-51, Nerad teaches the use of thiols commercially available under the trade name RCC-15C, RCC-15D, RCP-611, and WCC-2B, wherein at column 8, line 38, at least RCC-15C is taught to be a thiol compound without an initiator present in the system. Therefore, the examiner deems that Nerad teaches compositions comprising vinyl-ether based urethane and polyfunctional mercaptan compounds without an exogenous photoinitiator. Additionally, it is known in thiol-ene chemistry that these systems can proceed with polymerization by exposure to radiation without the addition of a photoinitiator because these systems have an inherent photoactivity, wherein the mercaptan hydrogen is abstractable hydrogen, which generates an active thiy radical. Therefore an artisan of ordinary skill in the art would have recognized that a photoinitiator is not necessary to add a photoinitiator when using a thiol, as disclosed by the reference.

Additionally, the examiner deems that applicant's amendment is new matter because the teachings of the specification state that "no...exogenous photoinitiator is required"—see [0029] and "...and environmental advantageous of not requiring any exogenous photoinitiator"; however applicant's amendment says "the substantial absence of exogenous photoinitiators." The examiner deems that applicant's amendment is open to minor amounts of photoinitiator (substantially), wherein applicant's specification is not open to "any or no" exogenous photoinitiator.

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***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. See above explanation.

***Claim Rejections - 35 USC § 102/35 USC § 103***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1 and 6-19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nerad et al (5,641,426).

Nerad et al teaches vinyl-ether-based matrix materials for optical responsive films in light modulating devices. The cured matrix film includes the reaction product of an isotropic polymerizable material that

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includes at least one vinyl-ether and at least one multi-functional reactant other than a vinyl-ether. The vinyl-ether compound may be a multi-functional vinyl-ether, a mono-functional vinyl-ether or a combination of both, wherein vinyl-ether functional urethane oligomers is disclosed as a usable vinyl-ether compound—see column 2, line 21-22 and claims 6-10. Said multi-functional reactant other than a vinyl-ether can be a thiol functional compound, such as those having the formula found in column 6, lines 24-40. These are esters of polyhydroxy compounds, such as glycerol or pentaerythritol, wherein compound like trimethylolpropane tris (3-mercaptopropionate) and pentaerythritol tetra (3-mercaptopropionate) is taught. These appear to read on at least some of the polyfunctional mercaptans of claims 7-11.

Said film can be produced by curing the vinyl-ether based composition with heat or by exposure to radiation, such as UV or electron beam—see column 4, lines 20-25. The reference teaches photoinitiation is preferred for curing the matrix—see column 9, lines 45-50. The examiner deems that applicants instantly claimed composition comprises open-language (comprising) and is therefore open to other components. Nerad et al teaches the polymeric matrix film can have enhanced T-peel adhesion by adding one or more copolymerizable acid reactant, such as acrylic acid or others found in column 7. This appears to anticipate the tackifiers of claim 11. Said matrix composition can be applied to at least one substrate or used in a multi-layered composite film. Said material substrates can be found in column 10, lines 51-55. The cured coated film and method on making said film appears to anticipate the adhesive product of claim 15 and method of claim 16, since the cured matrix is adhered permanently to the substrate once cured. Additionally the compositions disclosed by the reference anticipated claims 1 and 12-14.

While Nerad et al does not expressly disclose applying said matrix composition using a hot-melt coater, the reference teaches coating by extrusion onto a roller coated with a substrate film from a coating die, wherein the die and the roller are heated—see examples starting in column 12, lines 29-38. This appears to anticipate applicant's instant claims 17-18. However, in the alternative, hot melt coaters are well known in the art and it would have been obvious for an artisan of ordinary skill in the art to apply said composition by any known method. The motivation would have been a reasonable expectation of obtaining an evenly coated film having a desired thickness in the absence of evidence to the contrary and/or unexpected results.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nerad et al (5,641,426) in view of Hagstrom et al (5,578,693).

Nerad et al teaches vinyl-ether-based matrix materials for optical responsive films in light modulating devices. The cured matrix film includes the reaction product of an isotropic polymerizable material that includes at least one vinyl-ether and at least one multi-functional reactant other than a vinyl-ether. The vinyl-ether compound may be a multi-functional vinyl-ether, a mono-functional vinyl-ether or a combination of both, wherein vinyl-ether functional urethane oligomers is disclosed as a usable vinyl-ether compound—see column 2, line 21-22 and claims 6-10. Said multi-functional reactant other than a vinyl-ether can be a thiol functional compound, such as those having the formula found in column 6, lines 24-40. These are esters of polyhydroxy compounds, such as glycerol or pentaerythritol, wherein compound like trimethylolpropane tris (3-mercaptopropionate) and pentaerythritol tetra (3-mercaptopropionate) is taught. See the remaining rejection in the above paragraph 6.

Nerad et al does not expressly teach the reaction components used to prepare the vinyl-ether terminated polyurethane.

Hagstrom et al teaches vinyl-ether terminated oligomers are well known in the art. The reference teaches making multi-functional terminally unsaturated urethane oligomers, wherein said terminal ends can be acrylate or vinyl-ether. Said urethane oligomers are obtained by reacting at least one diisocyanate with at least one polyol to form a isocyanate terminated oligomer, reacting said prepared oligomer with at least hydroxyl-terminated acrylate or vinyl-ether to form a terminally unsaturated urethane oligomer ad then reacting the remaining isocyanate groups with at least one alkoxylated polyhydric alcohol. Said polyols used in the first reaction step can be a polyether polyol or a polyester polyol having an equivalent weight of up to 2000. Said diisocyanates can be found in column 3, lines 14-21, wherein Desmodur W, IDPI, and TMDI are disclosed. Said urethane oligomers formed having molecular weight in the range of 1,500 to 10,000.

Nerad et al and Hagstrom et al are analogous art because they are from the same field of endeavor that is the art using of vinyl-ether functional urethane compounds.

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Therefore one of ordinary skill in the art would have found it obvious to use a vinyl-ether terminated urethane oligomer prepared from a polyol having molecular weight of up to 2000 with the above listed diisocyanates having molecular weights up to at least 10,000 since these are well-known in the art, see Hagstrom et al, in compositions such as those described by Nerad et al. The motivation would have been a reasonable expectation of successfully radiation curing said compositions as suggested by both references in the absence of evidence to the contrary and/or unexpected results.

*Conclusion*

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sanza L. McClendon whose telephone number is (571) 272-1074. The examiner can normally be reached on Monday through Friday 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is ~~703-872-9306~~. *JMC* 8/20/05  
571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sarza L. McClendon

Examiner

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SMc